

IN THE CLAIMS

The following listing of claims replaces all previous listings and versions of claim in this application.

1-22. (Cancelled)

23. (currently amended) An electric vehicle, comprising:
a vehicle frame, comprising:

a lower frame portion that comprises a plurality of struts, ~~associated with each other~~ strut having first and second ends that are attached to at least an end of another one of the struts to form a lower strut-framework and a skin member covering openings between the first and second ends of the struts, and

an upper frame portion comprising a skin member associable with the lower framework in a stiffening association for significantly increasing the stiffness of the lower framework,

wherein the associated lower framework and upper frame portion cooperatively define and substantially enclose an interior cavity therebetween, the struts comprising:

a first group of struts disposed to one lateral side and defining a lateral portion of the cavity, and

a second group of struts disposed to an opposite lateral side of the cavity from the first group and defining another lateral portion of the cavity;

a seat supportively mounted on the upper frame portion above the cavity;

a plurality of wheels supportively associated with the ~~frame~~ lower framework;

an electrical energy source housed in the interior cavity; and

a electric motor connected to ~~and powered by~~ the energy source for receiving propulsive energy therefrom, and connected to at least one of the wheels for propelling the vehicle using the propulsive energy.

24. (Previously presented) The vehicle of claim 23, wherein the energy source comprises a battery, the assembled frame has a torsional stiffness, and the skin

member of the lower frame portion comprises a battery tray that is configured for supporting the battery to significantly increase the torsional stiffness of the assembled frame, the upper and lower frame portions being configured for allowing removal of the battery tray from the interior cavity when the upper and lower frame portions are separated, wherein the assembled frame portions are configured for substantially enclosing the battery.

25-31. (Cancelled)

32. (Previously presented) The vehicle of claim 23, wherein first and second group each comprises a longitudinal strut that runs generally longitudinally, the longitudinal struts being spaced from each other substantially on opposite lateral sides of the interior cavity, the first frame portion being supported on the wheels such that the longitudinal struts are in compression, and the second frame portion extends over and across the interior cavity and is structurally associated with the longitudinal portions for substantially increasing the stiffness thereof.

33. (Currently amended) The vehicle of claim 23, wherein the plurality of struts comprises additional struts connecting the first and second groups of struts and being disposed on ~~additional sides~~ at least one longitudinal side of the cavity.

34-36. (Cancelled)

37. (New) A vehicle frame, comprising:
a first frame portion having a first frame portion stiffness and being configured for connecting to at least one vehicle wheel;
a second frame portion having a second frame portion stiffness and being configured for supporting a rider seat, the second frame portion being separably associable with the first frame portion in a stiffening association to cooperatively provide an assembled frame that has a frame stiffness that is significantly greater than a first and second stiffnesses independently;

wherein the assembled frame is configured such that the second frame portion is supported by the first frame portion;

wherein the first and second frame portions of the assembled frame cooperatively:

define and substantially enclose an interior cavity dimensioned for housing an electrical energy-source for providing propulsive energy to a propulsion system for propelling the vehicle, and

include a strut framework that comprises a plurality of supportive struts, which struts each have first and second ends that are each attached to at least one of the ends of another one of the struts, such that the framework provides a major portion of the support of the rider on the wheel;

wherein the struts include first and second lateral groups of the struts disposed on and defining opposite lateral side of the cavity.

38. (New) The vehicle frame of claim 37, wherein each lateral group includes upper and lower struts disposed one above the other and extending generally longitudinally along the first and second sides.

39. (New) The vehicle of claim 38, wherein the assembled frame is configured for being supported on the first wheel and a second wheel, which is disposed on an opposite longitudinal side of the frame from the first wheel, such that the upper struts are in compression, and the second frame portion extends over and across the interior cavity and is structurally associated with the longitudinal portions for substantially increasing the stiffness thereof.

40. (New) The vehicle of claim 38, wherein the upper struts are disposed along an upper half of the interior cavity, and the lower struts are disposed along a lower half of the interior cavity.

41. (New) The vehicle of claim 37, wherein the first and second lateral groups are connected to each other by others of the struts that extend substantially laterally and disposed on and defining at least one longitudinal side of the cavity.

42. (New) The vehicle of claim 41, wherein the longitudinal side includes front and rear longitudinal sides.

43. (New) The vehicle of claim 37, wherein the first frame portion comprises the strut framework.

44. (New) The vehicle of claim 37, wherein the first frame portion includes some of the struts of the framework, and the second frame portion defines others of the struts of the framework, wherein at least some of the ends of the struts of the first frame portion are coupled at least some of the ends of the struts of the second frame portion in the assembled frame.

45. (New) The vehicle frame of claim 37, wherein the assembled frame comprises a structural skin member that is structurally associated with a plurality of the struts for significantly increasing the torsional stiffness thereof and for closing at least portions of openings defined between the plurality of struts.

46. (New) The vehicle frame of claim 45, wherein the structural skin member comprises a plurality of structural skin members structurally associated with different pluralities of struts for substantially increasing the torsional stiffness thereof.

47. (New) The vehicle frame of claim 46, wherein the skin members of the first frame portion comprise a battery tray inside the interior cavity configured for supporting a battery sufficiently large to provide propulsive energy to power the propulsion system, the battery tray being associated with the first framework for significantly stiffening the first framework.

48. (New) The vehicle frame of claim 47, wherein first and second frame portions are associated in the assembled frame such that the second frame portion is separable from the first frame portion for permitting access to the battery in the battery tray.

49. (New) The vehicle frame of claim 37, wherein the struts comprise at least one concave bracket configured for receiving and supporting a bottom portion of a battery tray sufficiently large to provide propulsive energy to power the propulsion system.

50. (New) The vehicle frame of claim 37, wherein a plurality of the struts are welded to each other at the first and second ends.

51. (New) The vehicle frame of claim 37, wherein the struts comprise a rear group of struts that are formed in a unitary piece and cooperatively define an open rear wall of the vehicle.

52. (New) The vehicle frame of claim 37, wherein the strut framework is made of aluminum or an alloy thereof, and the second frame portion comprises a skin member made of a composite, fiber-reinforced material.

53. (New) The vehicle frame of claim 37, wherein in the assembled frame the first frame portion is a lower frame portion disposed beneath the second frame portion, which is a lower frame portion, wherein the first vehicle wheel is a rear vehicle wheel, the first frame portion being configured for connecting to a front vehicle wheel for supporting the second frame portion and rider thereon from the front and rear vehicle wheels.

54. (New) The vehicle frame of claim 53, wherein the lower frame portion comprises a head tube configured to rotatably receive a steering tube that is mounted with one of the wheels, which is a steerable wheel of the vehicle.

55. (New) The vehicle frame of claim 53, wherein:

the first frame comprises front and rear connection portions that are respectively configured for mounting from the front and rear wheels;

wherein the second frame portion in the assembled frame increases the torsional stiffness of the first frame portion by a factor of between about 1.2 and 10 measured between the front and rear connection portions.

56. (New) An electric vehicle, comprising:
the vehicle frame of claim 55;
a seat supportably mounted on the second frame portion;
the wheels, which are supportively associated with the assembled frame by the connecting portions;
the energy-source housed in the interior cavity; and
an electric motor connected to and powered by the energy source and connected to at least one of the wheels for propelling the vehicle.

57. (New) The vehicle of claim 56, wherein the wheels comprise up to three wheels.

58. (New) The vehicle of claim 57, further comprising a suspension system including a swing arm that supportively connects at least one of the wheels to the rear connecting portion.

59. (New) The vehicle frame of claim 37, wherein the assembled frame defines a step-through to provide a scooter frame.

60. (New) The vehicle frame of claim 37, wherein the interior cavity has a volume of at least about 1,000 in³ to contain the energy-source.

61. (New) The vehicle frame of claim 37, wherein the interior cavity has a volume of at least about 2,500 in³ to contain the energy-source.

62. (New) The vehicle frame of claim 61, wherein the interior cavity has a height of at least about 15 inches, a width of at least about 6 inches, and a length of at least about 25 inches.

63. (New) The vehicle frame of claim 37, wherein the first and second frame portions of the assembled frame cooperatively substantially enclose at least top, bottom, front, and lateral sides of the interior cavity.